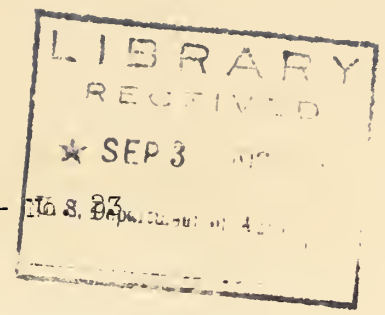


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SAFEGUARDING YOUR FOODS AND DRUGS --
Tuesday, August 5, 1930.



A series of radio talks by W. R. M. Wharton, Chief of Eastern District, Food, Drug, and Insecticide Administration, U. S. Department of Agriculture, delivered Tuesday mornings at 10 a.m., Eastern Standard Time., through WJZ, New York, and the following other stations associated with the National Broadcasting Company: KWK, St. Louis, WGLN, Kansas City; KFAB, Lincoln, Nebr.; WRC, Washington; WBZA, Boston; KSTP, St. Paul; WSH, Nashville; WAPI, Birmingham; WJAX, Jacksonville; WRVA, Richmond.

Good morning my radio friends, your Government inspector is with you once again. I am telling you stories of my personal experiences in the enforcement of the Federal Food and Drugs Act, in order to show you how your foods and drugs are safeguarded, and I am telling you how to read labels, in order to permit you to protect yourselves and become more careful, more economical, and more discriminating buyers, and by the way, a large number of home economics teachers are preparing to teach label-reading in their classes this fall.

My story today will be about the operations of an individual who devised an intricate scheme to dispose of rotten eggs for food purposes. His scheme was based upon the fact that rotten and unfit eggs have a legitimate use for tanning purposes, and so he organized the Blank Tanners Egg Yolk Company and under this company name he bought rotten eggs in New York City, and these he shipped to Boston, marked, "Rots and Spots for Tanners' Use Only". Now there was no reason to ship rotten shell eggs to Boston for tanners use, since tanners eggs are used in liquid form and if the transactions had been legitimate, the tanners eggs would have been broken out in New York and shipped in barrels to Boston. Then the question was to determine whether the eggs which went in interstate commerce marked, "Rots and Spots for Tanners' Use Only" were actually sold in Boston for food purposes, and here is the way your food and drug inspectors determined the facts.

One night as the Boston boat cleared from the New York dock, two men approached the captain, and displayed their gold-plated Federal food and drug inspector badges. They told the captain they wanted to examine the large shipment of shell eggs, which the Blank Tanners Egg Yolk Company had placed on the boat for shipment to Boston. The inspectors then proceeded to the hold of the boat, changed into working clothes and set to work by candling to determine the character of the eggs in the shipment. They had brought candling equipment along with them. Well, your food and drug inspectors determined that the eggs were rotten and unfit for food. Now the next operation which these inspectors performed was a very interesting one. You have heard me speak before about the indicator or marker method of food control.

Your food and drug inspectors had brought with them as a part of their equipment two hypodermic syringes and a quantity of a colorless, liquid chemical substance. The syringes were loaded with this chemical substance and the very fine points of the syringes were introduced through the shells of the eggs and a small quantity of the chemical substance thereby placed into each egg. After puncturing each egg shell your inspectors sealed the small hole with a very small and unnoticeable amount of candle wax. The Boston consignee had his wagons at the dock when the steamer landed and hauled the cases of rotten eggs to the Boston plant of the Blank Tanners' Egg Yolk Company. The next day your food and drug inspectors took a place, one in a nearby alley, the other behind a fence so that the shipping exits of the plant could be shadowed at all times. They were looking for wagons to come and load with frozen eggs, that is, eggs broken out of the shell and frozen solid, and sure enough in the late afternoon two wagons drove up, a large quantity of cans were loaded thereon, and each can contained 30 pounds of frozen egg meats. Each of your inspectors followed one of the wagons, and in each case, the wagon's destination was a cake bakery. After the wagons had unloaded, your food and drug inspector entered the cake bakery plants and proceeded to examine the frozen eggs. The frozen eggs were to be used in making bakery cakes. Now, remember your inspectors wanted to know whether the shipments of rotten eggs going from New York to Boston in interstate commerce were being used for food purposes and remember they had placed a chemical in the shell eggs. Now, their job was to try to find this chemical in the frozen eggs which were delivered for food purposes to the bakers. The chemical introduced in the shell eggs was colorless, but it was such a chemical that when another colorless liquid is added to material which contains it, a pink color develops. Your inspectors carefully take samples of the frozen eggs in the cake bakeries. They apply small portions of the second colorless chemical. Aren't you interested to know whether a pink color developed? - Well, my friends, it did, and here was absolute proof that the same rotten eggs shipped from New York in the shell were actually in these cans which contained frozen egg meats intended to be used in food. Of course, this illegal business was stamped out, but that is not all. This operator to whom I have been referring was later indicted with his son for conspiracy and the United States Marshall was instructed to effect his arrest. He escaped for a time and finally one of your food and drug inspectors was appointed a Deputy Marshall, he was given warrants, a revolver, and two pairs of handcuffs. He might as well have left the revolver and handcuffs at home, because they were not needed. When your food and drug inspector located the pair of crooks, they surrendered-and what do you suppose happened. The old man got down on his knees, Yes, actually, - in the middle of the street and begged to be let off--don't you see he was as yellow as the yolks of his rotten eggs? - Finally, he pleaded guilty, was fined heavily, and agreed to go out of the egg business forever. It is by actions such as this my friends, that your foods and drugs are safeguarded.

Mrs. Housewife how do you buy eggs? Do you content yourself with asking your grocer for a dozen fresh eggs? If this is as far as you go, you are not employing the best method of purchase. When your grocer sells you eggs what does he tell you about them? Does he say that they are fresh eggs or hennery eggs, or nearby hennery eggs? Perhaps he may say that they are "Selected" eggs, or "Quality" eggs. If this is all he tells you about them he has not given you sufficient information for you to guide yourself most intelligently. In this part of my talk, we are not going to deal with bad or inedible eggs, because you will not encounter inedible shell eggs for sale in your grocery stores, but your grocer may sell you an inferior quality of eggs when you expect to get a good quality. He may sell you small eggs when you pay the price of large ones. I am going to talk to you today about quality and relative size of eggs, about standards and grades for shell eggs- all of which should be your buying guide, but before I go into that subject, let me ask you, have you a prejudice in favor of eggs with white shells, with brown shells and why do you have the preference? In certain markets, eggs with white shells bring a premium and in certain other markets, eggs with brown shells sell for higher prices. Now, the reason for this is that years ago the color of the shell was a sort of index of quality -. In certain localities all nearby flocks of chickens produced white eggs and in certain other localities, nearby flocks produced brown eggs. Consequently, the people in these respective localities came to look upon white or brown eggs as the fresher, because they knew that such eggs were produced at nearby points. The original conditions have long since passed, but still New Yorkers prefer white eggs, while Bostonians prefer brown eggs. From a food standpoint, brown eggs are just as good as white eggs and white eggs are just as good as brown eggs. There is no difference. Now, my friends, the relative desirability of eggs depends upon their relative physical condition. The belief was, and is now largely prevalent that cold storage eggs are uniformly inferior to eggs which have not been in cold storage. This is not always true. Eggs in prime condition when placed in cold storage almost always are better eggs when they are taken out and sold than a great many eggs which never go into cold storage, but which have been improperly cared for between the time of production and sale. Therefore, the term "Cold Storage" is not a true index of quality - and likewise the terms "firsts" and "seconds" are not very definite terms of quality.

Newly laid eggs practically always possess ideal eating qualities, but many of us cannot take our eggs out of the nest for breakfast, and since eggs deteriorate, when they come to us they may have lost in varying degrees many of the qualities which make them most desirable. The real tests for the quality of eggs are: (1) Condition of the shell, that is, whether dirty or clean. Necessarily clean eggs are better than eggs with stained or dirty shells. (2) Size of the air space inside the shell. Eggs with only a very small air space are high quality eggs because the shell is practically full when eggs are first laid but as they age,

evaporation takes place and the size of the air space increases. This air space varies from practically nothing up to $\frac{3}{8}$ inches or more, looking at the egg in front of a candle with the large end up, (3) Condition of the egg yolks - fresh eggs have sound, full-floating or mobile, toughly membraned yolks, which are only dimly visible when the eggs are held before the candle, whereas the lower qualities of eggs have yolks with weakened membranes and which are plainly visible before the candle, (4) Condition of the whites of the eggs. The best grades of eggs have firm, clear, thick whites, whereas the lower grades have weak and watery whites, (5) Condition of the germ. In the best grades, the germ is not visible before the candle. In the lower grades, the germ may be slightly visible or clearly visible.

Based on these considerations, the Bureau of Agricultural Economics of the United States Department of Agriculture has established definitions and standards for eggs. There are four United States grades of retail eggs, which are named, "UNITED STATES SPECIALS", the highest quality; "UNITED STATES EXTRAS", the next quality; "UNITED STATES STANDARDS", the third quality; and "UNITED STATES TRADES", the lowest quality. All of these grades of eggs may be furnished in three sizes, namely, large, medium, and small. Large eggs should weigh on the average 24 ounces per dozen. Medium eggs should weigh 20- $\frac{1}{2}$ ounces per dozen, and small eggs 17 ounces per dozen. Now, Mrs. Consumer, if you go into a store and buy eggs according to United States grades and you ask for a dozen U. S. EXTRAS, large, and a dozen U. S. EXTRAS, small, do you know the relative price you should pay? This you can figure, since the weight of a dozen U. S. Extras eggs is 30 per cent more than a dozen small U. S. Extras eggs. If the large eggs are selling for \$.40 per dozen then the value of your small Extra eggs should be \$.28 per dozen.

Quality Specifications U. S. SPECIALS (Retail Grade)

The highest quality egg is a U. S. SPECIAL. Such eggs are suitable for every use and especially for soft boiling, poaching, or for use in semi-raw or raw state. They are also suited to use in diets of invalids and persons of the most fastidious tastes.

Eggs of this grade must be uniform in size and contain at least 80 per cent eggs of the following specifications: Shell- clean and sound
Air cell- $\frac{1}{8}$ inch or less in depth.
Yolk- Localized and regular. May be dimly visible before candle.
White- Firm and clear.
Germ- No visible development.
When broken out of the shell, eggs of this quality show a firm, well rounded yolk which stands up well, and a thick firm white.

Quality Specifications U. S. EXTRAS - (Retail Grade)

Eggs in this grade are next to the highest quality and represent the best grade of table quality eggs ordinarily obtainable at retail stores.

Eggs of this quality are suitable for all table purposes. Even for soft boiling and poaching they are satisfactory to most persons, though some may prefer eggs of the quality of U. S. Specials for these purposes. They are suitable for the cooking of all dishes in which delicacy of flavor is an important consideration.

Eggs of this grade must be reasonably uniform in size and contain at least 80 per cent eggs of the quality of U. S. Extras or better. The quality specifications for a U. S. Extra egg are as follows:

Shell- Clean, sound.

Air cell- $2/8$ inch or less in depth; localized, regular.

Yolk- May be visible.

White- Firm, clear.

Germ- No visible germ development.

When broken out of the shell, eggs of this grade show a firm yolk which may not be quite so well rounded or stand up quite so well as a U. S. Special but which nevertheless, is good in these characteristics. The white is thick and firm but may show a slightly weakened condition as compared with a U. S. Special.

Quality Specifications
U. S. STANDARDS (Retail Grade)

Eggs of this grade are third quality and represent only fair table quality, although the great bulk of eggs in commercial trade channels are of this grade. They are best suited for frying and similar table use, such as scrambling with bacon, and for ordinary cooking. They are not generally suitable for poaching or soft boiling or for use in the more delicately flavored foods containing eggs.

Eggs of this grade may be variable in size and must contain at least 80 per cent eggs of the quality of U. S. Standards or better. The quality specifications for a U. S. Standard egg are as follows:

Shell- Clean, sound.

Air Cell- $3/8$ inch or less in depth; localized, may be slightly tremulous.

Yolk- May be plainly visible, mobile.

White- Reasonably firm.

Germ- Development may be slightly visible.

When broken out of the shell, eggs of this grade may show a yolk which has weakened to some extent and which in consequence is somewhat flattened. The white may be considerably thinner than in U. S. Extras or U. S. Specials. Some increase in the normal size of the germ spot may be apparent.

Quality Specifications
U. S. TRADES (Retail Grades)

This grade is the lowest or fourth quality of edible eggs and is suited primarily for use in cooking and baking. Eggs of this grade may vary greatly in size, but at least 80 per cent or more must be of the quality of U. S. Trades or better. The quality specifications for U. S. Trade eggs are as follows:

Shell- Clean, sound.

Air Cell- May be over 3/8 inch in depth; may be bubbly or freely mobile.

Yolk- May be plainly visible, dark in color, freely mobile.

White- May be weak and watery.

Germ- Development may be clearly visible but no blood showing.

When broken out of the shell, eggs of this grade show a yolk that is unbroken, but that is flattened out, is weak, and breaks easily. The white may be decidedly watery and show a relatively small proportion of thick white surrounding the yolk. The germ spot on the surface of the yolk may be considerably enlarged but without any blood in it.

U. S. RETAIL GRADES are of three weight classes. These weight classes are provided for eggs in the U. S. Retail Grades, viz-

<u>Weight Class</u>	<u>Average Weight per Dozen</u>
Large	24 Ounces
Medium	20-1/2 "
Small	17 "

The minimum weights for individual eggs permitted in each weight class are:

Large - At the rate of 22 oz. per dozen.

Medium - " " " " 19 " " "

Small - " " " " 15 " " "

When eggs are designated by any of these terms descriptive of weight, it should be understood that these terms do not change the quality requirements indicated by the grade name. For example, U. S. Specials, Small, are of exactly the same quality as U. S. Specials, large, the only difference being one of weight.

Many of the States have specific laws covering the names under which the various grades of eggs may be sold, and these differ in the various States. For your own State regulations, write to your State Food and Drug Commissioner at your State capital.

The State of New York has a law requiring that eggs be sold at retail by grades. The New York State grades are essentially the same as the U. S. grades, except that the New York grades have different names. These are, FANCY grade, which corresponds to U. S. SPECIALS, GRADE A, corresponding to U. S. EXTRAS, GRADE B, corresponding to U. S. STANDARDS, and GRADE C, corresponding to U. S. TRADES, and New York State makes it mandatory that eggs be sold by dealers under their proper grade designation.

The Federal Bureau of Agricultural Economics is furnishing a grading service for eggs and eggs so graded carry a seal which reads: "Certificate of quality issued by authority of the United States Department of Agriculture - This is to certify that the lot of eggs from which the eggs in this package were taken was graded by an official Federal egg grader and that the date of said grading and the number of the grading certificate are stamped hereon and that the quality at the time of grading was 'U.S. Specials', 'U. S. Extras', 'U. S. Standards', and 'U. S. Trades', as the case may be". Now my friends, look for this little grading stamp on cartons of eggs. You won't find it very often at present, but if you want to buy eggs according to U. S. grades, insist to your grocer that he sell U. S. graded eggs. My friends, I want 100,000 women when they go to their grocery store tomorrow morning to ask their grocer for U. S. or State graded eggs, and I want that 100,000 women to continue to insist upon getting U. S. graded eggs every day thereafter until their grocers comply.

I have frequently referred to candling eggs. All that is needed in order to candle eggs is a bright light surrounded by a shield with a small opening before which the egg can be held and twirled. You may make an egg candling device out of a piece of stove pipe 12 or 14 inches long. If you use a lamp in this stove pipe, make a few small notches or openings at the bottom to provide air for the lamp. Cut a hole 1-1/4 inches in diameter in the stove pipe just opposite the flame of the lamp. If electric light is used, cut the round hole about three inches from the bottom of the pipe and let the electric light bulb drop down from the top and rest opposite the hole, or a candling device may be made by placing an electric light inside of a small black box, cover with lid, cut hole in the end, about 1-1/4 inches in diameter. Candling is done in a dark room. The egg is held in the hand in front of the aperture of the candling device with the large end against the opening. A few moderately rapid twists are given to the right and to the left. During this turning, the air space is noticed and the condition of the yolk and white and germ of the egg is noted. Now for measuring the air space the Bureau of Agricultural Economics has produced a device called the "Air cell gauge". By placing this on the egg before the candle you can tell the size of the air space and from this judge pretty accurately the U. S. grade of the egg. If you will write to me I will send you one of these devices with copies of my read-the-label information.

You will sometimes find eggs labeled "Shell treated". This will mean that the eggs have been protected from evaporation by treating the shell with oil or other substances. Now my radio friends, I want you to learn what comparative quality in eggs means. I want you to learn to buy eggs by grade. I want you to learn to be able to check your purchases by candling to determine whether you are getting what you buy and pay for.

I want you to weigh each dozen of eggs you buy until you can determine visually whether the eggs you get fall into the large, medium, or small class. I want you to remember that large eggs are worth about 15 per cent more than medium eggs. The medium eggs are worth about 15 per cent more than small eggs. I want you to insist upon being advised by your grocer as to the exact quality of eggs he is giving you and the exact size designation. He knows, he generally buys by grade, and by size, and I want you to read labels on egg cartons to determine their grade, when such grade designation is stated, and for all purposes that reading labels will mean to you. Won't you do all of these things to protect yourselves and to contribute your bit for your own protection and to the furtherance of the movement to bring about honesty of dealing in eggs in this country. You may have one of the egg air cell measuring gauges and you may have copies of this talk, and of all of my read-the-label information, including talks on vitamins and botulism for the asking.

Write to W. R. M. Wharton, United States Department of Agriculture, 201 Varick Street, New York City.